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10CV53

Fifth Semester B.E. Degree Examination, Dec.2015/Jan.2016

Structural Analysis - II

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer FIVE full questions, selecting at least TWO questions from each part. 2. Assume any missing data suitably.

PART - A

- 1 For a simply supported beam of span 25m, compute by influence line principle, i) Maximum bending moment at 8m from left support ii) Absolute maximum bending moment and iii) Maximum reaction

The series of concentrated loads to be taken as rolling load system as shown in Fig. Q1

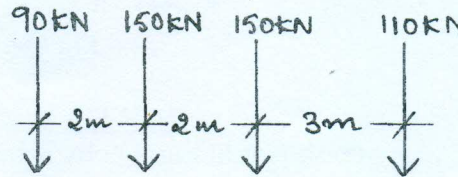


Fig. Q1

(20 Marks)

- 2 Analyse the portal frame shown in Fig. Q2 using slope deflection method. Sketch BMD.

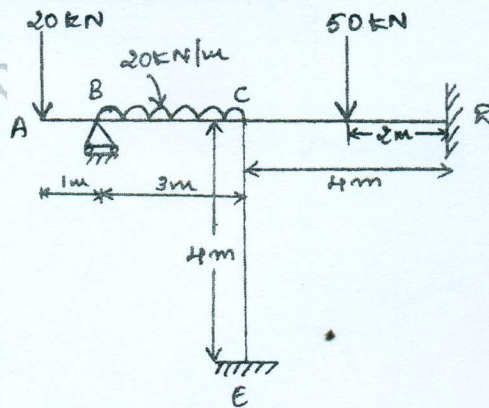


Fig. Q2

(20 Marks)

- 3 Analyse a continuous beam shown in Fig.Q3 using moment distribution method. Sketch, SFD and BMD support 'B' and 'C' settles by 8mm and 3mm respectively EI = 2x10^4kN/m^2.

(20 Marks)

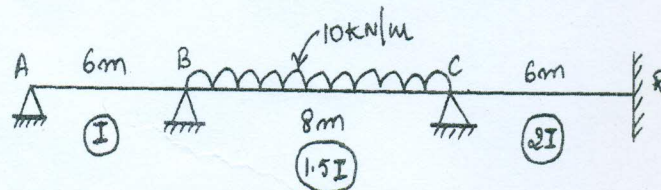


Fig. Q3

Important Note : 1. On completing your answers, carefully draw diagonal cross lines on the remaining blank spaces. 2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.



- 4 Analyse the portal frame using slope deflection method or using moment distribution method. Sketch BMD and elastic curve. (20 Marks)

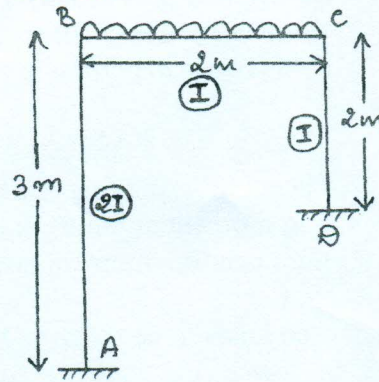


Fig.Q4

PART - B

- 5 Analyse the portal frame shown in Fig. Q5 by Kani's method and sketch BMD. (20 Marks)

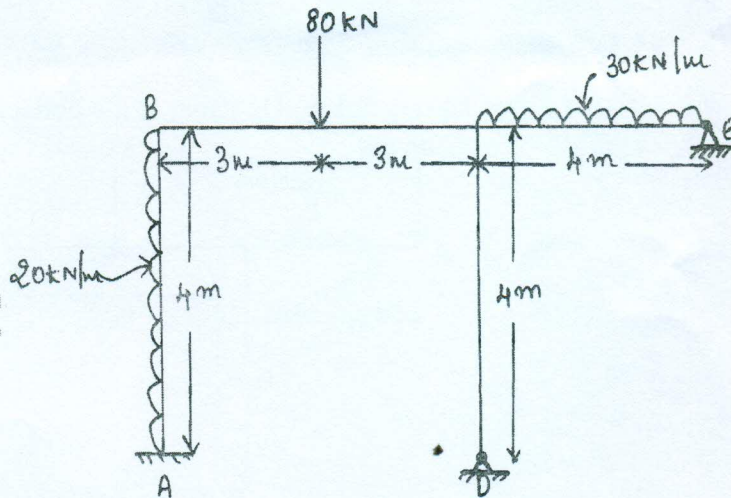
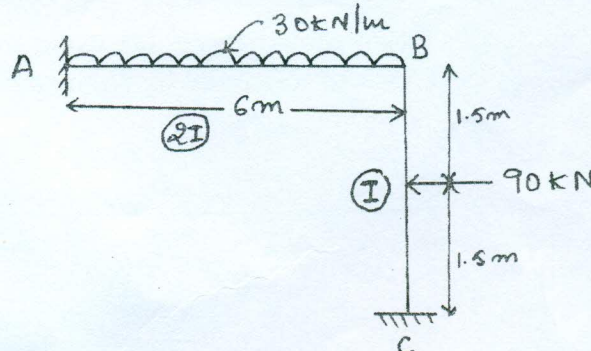


Fig.Q5

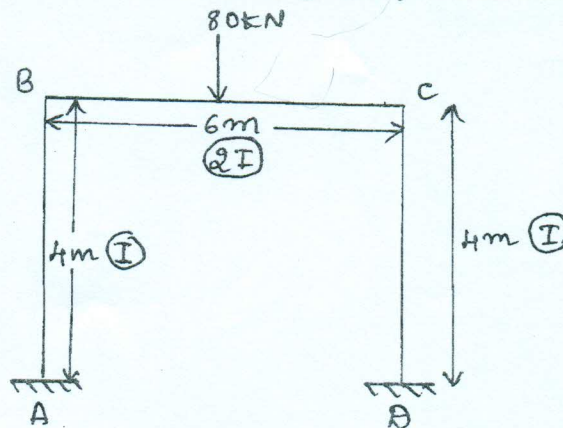
- 6 Analyse the frame shown in Fig. Q6 by flexibility method. Draw BMD. (20 Marks)





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- 7 Analyse the portal frame loaded as shown in Fig. Q7 by stiffness method. Sketch BMD



(20 Marks)

- 8 a. Explain the following
- i) Period frequency
 - ii) Damping
 - iii) Forced vibration
 - iv) Single degree of freedom systems
- b. Develop the solution for a differential equation of a body, when it is under;
- i) Free undamped vibration
 - ii) Free damped vibration.

(04 Marks)

(16 Marks)
